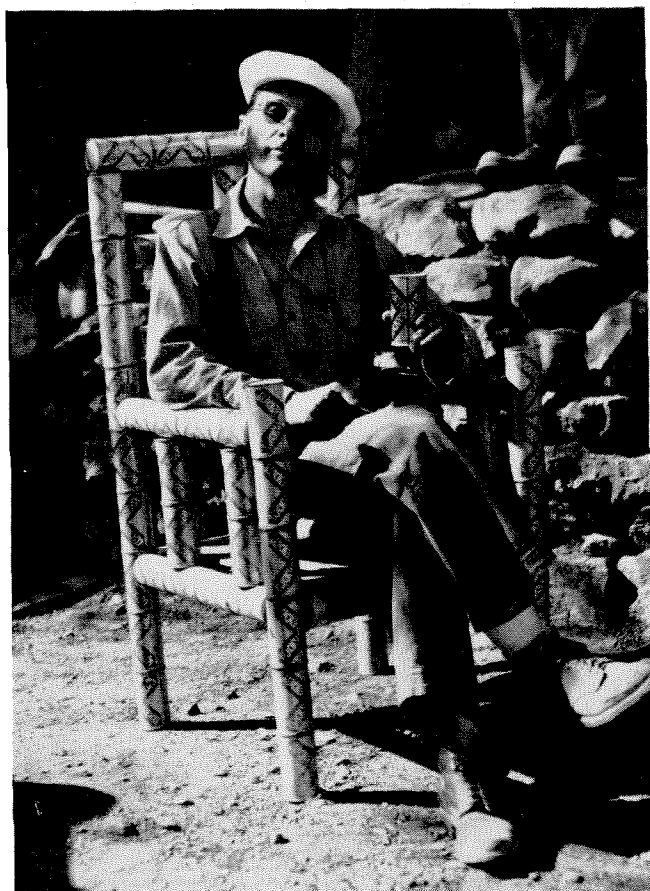




Searles Lake, one of world's great deposits of saline materials, invariably produces this reaction in geologists.

Geologists on the Ground

A report on Geology's regimented vacation known as the Annual Spring Field Trip



Dr. A. E. J. Engel, noted professor of Mineralogy, adding a much-needed air of distinction to the junket.

IF CALTECH'S HALLS of Geology seemed unaccountably silent during the recent week between the Winter and Spring terms, it was for a very good reason. No less than 64 of those souls who normally spend a large part of every day in Arms or Mudd (or in both buildings) sought relaxation from the ardors of the Winter term in the Annual Spring Field Trip, a mildly regimented vacation in the form of an excursion to points of geologic interest in California and adjacent western states. This year the group was treated to the scenic and geologic wonders of the desert country between the Sierra Nevada and Death Valley.

Early Saturday morning, March 18, the caravan of 14 student-driven automobiles took off from Pasadena and headed over the San Gabriel Mountains to the edge of the Mojave Desert near Palmdale, where the famous San Andreas fault zone was examined at close range.

The first night was spent beside a small stream in Red Rock Canyon, amid scenic vistas that would set any red-blooded travel agent scurrying frantically for adjectives. As in past years, the men camped out during the entire trip, preparing nearly all of their own meals on the ground and sleeping beneath the stars after the fashion of desert travelers of long ago. The all-important first night's camp was made without untoward incident, although a large handful of blasting caps was spotted by an alert observer and whisked from behind a bush against which an eager camper was building a sizable bonfire! Evidently left on the sand by an absent-minded prospector, the caps were detonated in a controlled but noisy manner by explosives-wise members of the entourage.

The following day's fun began with a mapping problem in a small area near the mouth of Red Rock Canyon. Having thus polished up their techniques of observation

and interpretation, the geologists moved on to the volcanic ash, or "seismotite," deposits of the Old Dutch Cleanser Corporation, and thence to the old mining district of Randsburg and Johannesburg.

Past Inyokern the caravan moved through the Little Lake volcanic area into the south end of Owens Valley. Major earthquake-fault features along the Alabama Hills and the east front of the Sierra Nevada were pointed out, and the history of Owens Valley was discussed as a brisk evening wind, increasing in velocity by the minute, began to worry the more experienced campers in the group. Still playing in luck, however, trip-leader Jahns found a good roosting spot in the lee of a high fill on the Friendly Southern Pacific, and a not unpleasant night was spent on the shores of almost-dry Owens Lake.

The third day was devoted to observations of faulting along the floor of Owens Valley and of the numerous formations so beautifully exposed along the bold west front of the Inyo Mountains.

The highlight of the day, provided by the Anaconda Copper Mining Corporation, was a tour of the surface plant and some of the underground mine workings. The students were able to observe highly mineralized rock in place, alteration associated with the ore deposition, and several mining techniques in use. Many specimens were obtained from the high-grade stopes, and only dusk and the need for making camp in Darwin Wash, several miles east of the mine, stopped the more eager collectors from taking large bites from a tempting stockpile of tungsten ore.

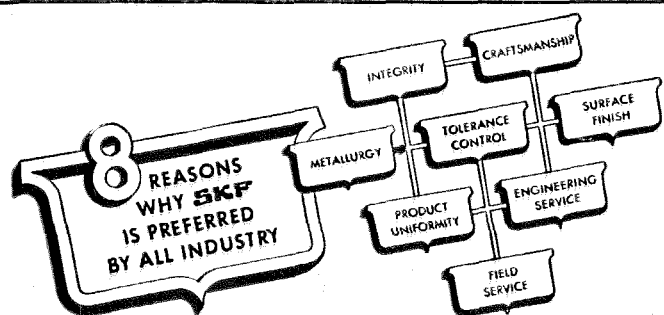
Darwin Falls, one of the most famous watering spots of early desert days, was visited the next morning. Here a beautiful stream of water flows through a deep, nearly

vertical-walled canyon and supports the growth of trees, grasses, and even ferns that are in refreshing contrast to the drab, scrawny brush on the Argus Range to the south and the Panamint Range to the east.

Following lunch and the customary baseball workout on the mirror-like surface of a small dry lake, or playa, the party arrived in Trona, a modern metropolis in the midst of desert wilderness. Here they were treated to a detailed tour of the gigantic \$40,000,000 plant of the American Potash and Chemical Company. Later, their heads still spinning with chemical formulae and concepts of controlled fractional crystallization on a bulk production scale, all headed northward for the Valley Wells recreation center maintained by the company. A large swimming pool proved a most refreshing attraction, even for those men most likely to be classed as true desert lovers.* After a hearty meal in the company cafeteria and a pleasant evening in Trona, during the course of which a baseball game was played under the lights, the men spread their sleeping bags on the grass at Valley Wells, almost forgetting that they were "in the wilds." Whatever doubts they may have had on this score were dispelled in the morning, however, when a chummy black widow spider and several warmth-seeking scorpions were discovered in or beneath the bedrolls of certain fortunate individuals.

Several hours were spent in studying the geology of Searles Lake, a now almost dry mass of crystallized salts

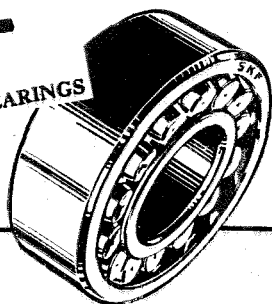
*—For the benefit of the uninitiated semanticist, a desert lover is distinguished from a desert rat in that he is bathless but does not necessarily enjoy the situation.



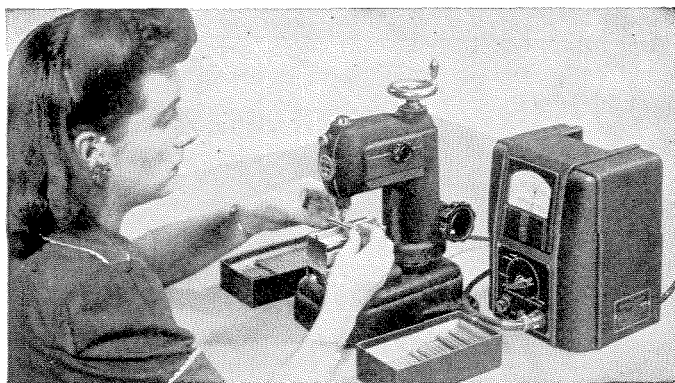
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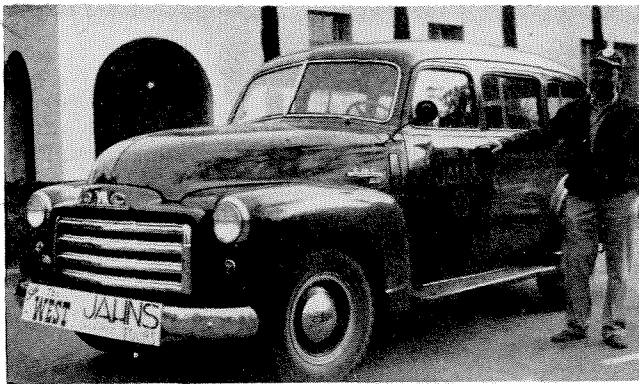
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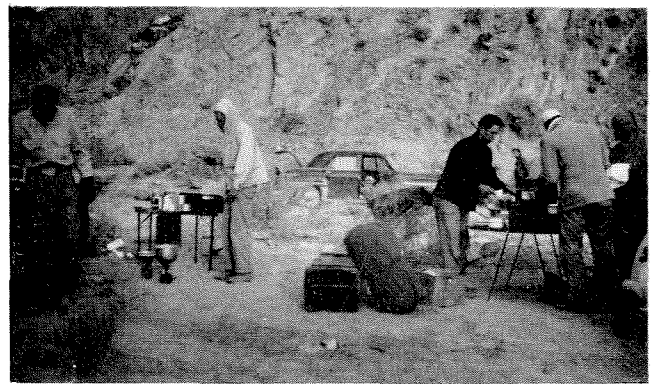
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BROWN & SHARPE



This is Jahns, leader of the trip, at the take-off. His car, like the others, was fitted out with bumper banners urging one and all to "See the West with Jahns Scenic Tours."



This is the kind of thing Jahns led his 63 charges into—camping out "like the desert travelers of old." Above, an old-fashioned breakfast at sun-up, and thermometer-down.

and brine that is one of the world's great deposits of saline materials. Many specimens of rare evaporite minerals were collected by the happy rock hounds in the party, while others soberly discussed the probable mode of accumulation of these salts.

The caravan, now reinforced by Dr. A. E. J. Engel, Tech Professor of Mineralogy, retraced its path to the north, past Ballarat and the remnants of other once-great mining camps, to the mouth of Wildrose Canyon, where all paused to inspect the Panamint graben, a great block of ground that has been dropped many feet downward to form a broad trough along the east side of the valley. Soon the cars were on their way again, heating up steadily as they began the long pull up Wildrose Canyon.

Several vapor locks and one refreshment stop later the entire caravan was on the attractive, gently rolling upland surface of the Panamint Range. A short side trip was made to Augerberry Point, from which 6500-foot eminence an almost unparalleled view of the Death Valley region can be obtained. Amid a crescendo of clicking camera shutters, Dr. Jahns attempted to point out the salient geologic features of this great valley area.

Following a stop in Emigrant Wash, where the students theorized on the origin of a rather strange rock formation, the party hurried down into Death Valley and pitched camp in the shelter of sand dunes and a volcanic crater. The good old wind soon sprang up, though, giving everyone a firsthand opportunity to observe the transport of solid materials by moving air. The following morning a pair of ancient spectacles, once carefully wrapped in an old newspaper, was found beside the remains of a shoe, the sole of which had been held to the uppers by means of long screws. These relics, evidently buried in the sand for many years, were not accompanied by remains of the owner.

A trip to the Corkscrew Canyon borate deposit in the Funeral Mountains followed a brief stop (for local color) at Furnace Creek Inn.

Dash for Shelter

That night, as the second sub-sea-level camp was made, a sand storm began to flex its muscles. The wind increased in velocity, and a rather difficult night was ultimately spent by all. A sandy breakfast fare was provided in the morning. Making additional stops from time to time, the caravan left Death Valley and crossed into the Amargosa Valley. As the afternoon progressed, storm clouds moved eastward and gradually spread over the entire sky. Believing completely in the intrinsic ability of all the men to stand up nicely under any adverse weather conditions, but at the same time not wishing to needlessly expose these hardy individuals to such meteorologic difficulties, Dr. Jahns decided to disband the trip half a day earlier than anticipated, and that night, amidst a torrential downpour, the students sought the shelter of their homes and dormitories back in the Pasadena area. They would not soon forget, however, the remarkable features seen, the many happy arguments of the week, and the numerous bits of good-natured horseplay that livened up the general proceedings. And, by no means least, many a man was brought once again face to face with that fundamental difference between text and diagrams in a book and the corresponding relations on the ground!



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